

**SECTION 38. SYSTEM RECOVERY****38.1 GENERAL.**

Use system recovery procedures in circumstances, which require a recovery of some or all of A&F files in the GAFS. These procedures prevent complete loss of the files and keep the system operating efficiently. The circumstances of a case determine the recovery procedure to be used. The AFO should tell the Defense Enterprise Computing Center (DECC) to let the AFO know before the DECC starts a system recovery. Depending upon the class of recovery, the AFO determines if A&F personnel should be physically present during recovery. If required, A&F personnel immediately check key balancing points to make sure the files are being correctly recovered and progressively updated. Recovery classes are:

- a. Recovery of the offline tape or disk files (paragraph 38.3).
- b. Restart of the online system (paragraph 38.4).
- c. Recovery of A&F online files (paragraph 38.5).

**38.2 CONDITIONS REQUIRING SYSTEMS RECOVERY.**

A&F personnel may detect that recovery of certain files is required before DECC. When A&F has researched a problem and some file damage is indicated, A&F contact the DECC for a thorough review of the problem and jointly determines if a file recovery is needed. Some of the conditions that indicate the files are in error are as follows:

- a. Daily MAFR accounting balances cannot be reconciled to fiduciary balances.
- b. Status of funds in certain records has changed, but the change is not accounted for by transactions.
- c. Accepted transactions from remote or batch input do not appear on the transaction history listings.
- d. Disk check zero-balance contains an excessive number of errors or dollar amount adjustments.
- e. Remote responses, which are abnormal for the transactions being input, indicate invalid files are being used.

**38.3 RECOVERY OF OFFLINE FILES.**

In some cases, tape or disk files used for offline processing (e.g., the monthly transaction file, base variable files, etc.) may be lost or become unusable. Normally, the DECC recovers these files with no action by A&F. But they may coordinate with A&F before processing a recovery, and may request A&F help in the recovery.

- a. The DECC starts recovery of the current month transaction file when an error occurs during the update of a current month transaction file, or if a current month transaction file is lost, damaged, or becomes unusable.

b. The DECC recovers base variable files on disk by reloading the base variable files from the latest updated transactions maintained by A&F.

c. The DECC recovers base management files or the ESP Description File by reloading the transactions created by A&F for base management report processing.

d. The DECC recovers other offline files by restarting the program or series of programs, which created the unusable file.

e. Errors in A&F products which cannot be traced to any other cause may be traced to a prior recovery of an offline file. If a prior recovery could have caused the problem, A&F should contact the DECC to determine dates and nature of offline file recoveries and perform specific audits of the recovered data.

#### **38.4 RESTART OF THE ONLINE SYSTEM.**

Occasionally, an online session may be terminated abnormally with no message back to the A&F remote sites. In this case, the DECC computer operators restart the A&F system. Any time this occurs, A&F should specifically audit transactions input both before and after the interruptions to see if the transactions processed normally and the proper records were updated. Also, when the computer operators restart the online A&F system, remote operators should process a transaction inquiry for the last transaction processed on a given remote device to see if the last transaction entered before termination was accepted or rejected. See section 22 for abnormal remote operation.

#### **38.5 RECOVERY OF ACCOUNTING AND FINANCE ONLINE FILES.**

a. Files Involved. A recovery of online files is necessary when any one of the following A&F disk files has been destroyed or is in an unusable condition:

- (1) Control Summary File.
- (2) Fund Summary File.
- (3) Program Summary File.
- (4) Document Summary File.
- (5) Responsibility Center Manager File.
- (6) Transaction Out File.
- (7) A&F Control Record.
- (8) Travel Transaction File (TR).
- (9) Travel For-Others File (TF).
- (10) Travel Master Record File (TM).

- (11) OA Record File (TO).
- (12) Travel Detail Record File (TD).
- (13) TR/MTA/GBL Record File (TG).
- (14) ADSN File.
- (15) Sales Code File.
- (16) FMS Data File.
- (17) MART Data Selection by Fund Code File.
- (18) MART Data Selection by Appropriation File.
- (19) MART Validation File.
- (20) MART Validation Error Message File.
- (21) Select/Extract Criteria File.

Either A&F or the DECC may be first to find the unusable condition. In either case, the recovery must be a coordinated effort.

b. Schedule of Processing. Before recovery can begin, A&F and the DECC jointly develop a processing schedule. To establish this schedule:

(1) Determine the last valid disk position by reference to open document lists, operating budget ledger and allotment ledger, results of inquiries, console log printout (in the DECC), etc. This disk position is the recovery starting point; all processing since the Shared File System (SFS) dump of the valid disk files must be redone. See paragraph 4.3 for description of SFS disk files dump tape.

(2) Develop a history of all processing which has taken place after the SFS dump of the valid disk position identified above. This includes all real time (remote) sessions, pseudo (interface) runs, end-of-day processing, disk check, zero-balance, offline kills, and the daily, monthly, or as-required lists processed during the period to be recovered. All processing identified above must be redone in the exact sequence in which it was originally done except the listings need be run only at key balancing points in the recovery and not at every point where they were first processed. The lists may be selectively redone in this way because the production of the lists does not affect the permanent disk files.

(3) Develop a step-by-step schedule of recovery processing.

c. When the schedule is developed, the DECC starts processing the recovery as shown in DFAS-DE 7071.2-M. The first step in recovery processing is to load the valid files to disk from the SFS disk files dump tape. Once correct SFS disk files are loaded, the remainder of

the recovery schedule is completed by the DECC with verification by A&F at key points specified on the schedule. Recovery processing follows one of three basic patterns, with specific local circumstances governing the exact recovery procedures:

(1) Files Damaged When A&F Disk Files are not in Use. This is usually found when an attempt is made to open or load the online system and it cannot be completed, or after completion of loading and opening the system and A&F does not receive valid responses to transactions, or finds that status of funds in CSRs, FSRs, PSRs, or DSRs is incorrect. Then the previous day's SFS disk dump is reloaded. Any batch processing done after the dump must be redone.

(2) Files Damaged During Online Processing. Recovery action depends on the specific conditions involved. This situation should cause a message to the computer operator or the A&F remotes. A&F may start getting abnormal remote responses to input transactions. To recover, reload the previous day's SFS disk dump. Reenter all batch processing done after the SFS disk dump. Reenter all transactions processed online after the SFS disk dump, but before the start of the problem. Use the A&F portion of the recovery transaction tape (paragraph 4.4). If the transaction tape cannot be used, reenter by remote.

(3) Files Damaged During Offline Batch Processing. The master control program may occasionally stop A&F pseudo processing for some reason. To recover, reload the last SFS disk dump and restart the batch process. If other transactions were entered between the SFS disk dump and the aborted batch processing, reprocess those transactions before the batch processing is restarted.

#### d. Audit and Verification.

(1) Process all recovery tapes through the pseudo and into the A&F system. This process produces a list in transaction register format, and shows input and output messages from the recovery process. The remote printouts are in remote identity sequence, which is not necessarily the exact input sequence. The date of the original processing is included in the "OP-PSEUDO" statement at head of each printout. Check these remote printouts to see that there are no rejected transactions. Since only accepted transactions are written to the recovery tapes (paragraph 4.4), rejects on printouts from recovery indicate some of the original input conditions were not exactly duplicated during recovery. In case of rejects, notify the DECC that the recovery was not successful and help them correct the problem and reaccomplish the recovery.

(2) Request a zero-balance disk (program NBQ050, section 35) and Automated Travel Database Validation (program NHGF00, AFM 177-326, section 3) on the recovered files. Research all errors and determine corrective action required. If error conditions show an invalid recovery, contact the DECC to see what has to be done.

(3) As a precaution and audit device, just before end of online processing each day, Reports and Analysis Division processes status inquiries against a few selected representative CSRs, FSRs, and PSRs. Then, if a recovery of online files is required before the next online session, the first online transactions processed after the recovery should be status inquiries against the same CSRs, FSRs, and PSRs. Status of the records should not be affected by recovery processing. (Of course, normal batch input processed between the two status inquiries could cause a change to some of the records.)

(4) Reports and Analysis Division keeps an accurate record of any recovery of online files. Clearly record the reason for the recovery. Label all listings produced by the recovery "Recovery of Online File," date, and file. Record results of the recovery and any unusual conditions for further reference.